

**A. INTRODUCTION**

The FGEIS analysis concluded that no significant impacts would occur to infrastructure systems (water supply and sewage treatment) as a result of the sale and redevelopment of the First Avenue parcels under the Rezoning Scenario's illustrative development programs. This chapter updates the assessment in the FGEIS to reflect the proposed development program considered under the Proposed Actions. This chapter also assesses the proposed development program's potential impacts to the stormwater management system.

The analysis finds that the proposed development program would not result in significant adverse impacts to the city's infrastructure systems. The water demand expected from the proposed development program is 1,474,711 gallons per day (gpd). As compared with the 2006 citywide demand of 1,069 million gallons per day (mgd) and 420 mgd in Manhattan, this increase would not significantly impact the water supply system. The sanitary sewage generation expected to result from the proposed development program is 913,619 gpd. This is about 0.3 percent of the design and permitted flows to the Newtown Creek Water Pollution Control Plant (WPCP). In order to accommodate the proposed development program, an 18-inch diameter sewer pipe in First Avenue from East 38th Street to East 39th Street would be upgraded to a 30-inch diameter sewer pipe.

Stormwater from the 700/708 First Avenue parcel would be either diverted from the combined sewer system into storm sewers that discharge directly into the East River or detained on-site. The diversion or detention would lessen the stormwater flow into the combined sewer system by 3.8 cubic feet per second (cfs) compared to the site being vacant and without stormwater diversion. Stormwater from 685 and 616 First Avenue would be detained and then discharged into the combined sewer system. The stormwater discharges would not have a significant adverse impact on the sewer system or on the water quality of the East River. Because of the diversion and/or detention of stormwater, the number of combined sewer overflow events is expected to be reduced.

**B. SUMMARY OF FGEIS FINDINGS**

The FGEIS analyzed the anticipated infrastructure demands resulting from potential redevelopment under the Rezoning Scenario's illustrative development programs at the First Avenue parcels. The 2007 Interim Build year and the 2011 Final Build year were analyzed for each illustrative development program. The analysis found that water demand for the development programs would range from about 546,000 gpd to 870,000 gpd in 2007, and from 1,065,000 to 1,090,000 gpd in 2011. This level of consumption is minimal as compared with the expected citywide demand of 1,069 mgd and the demand in Manhattan of 420 mgd, and would therefore not lead to a significant impact on the water supply system.

The sanitary sewage generation associated with the Rezoning Scenario's illustrative development programs was anticipated to range from 456,000 to 674,000 gpd in 2007, and 781,000 to 1,064,000 gpd in 2011. The projected flows from the illustrative development programs were found to be small compared with the total expected flows at the Newtown Creek WPCP, which are 235 mgd in 2007 and 240 mgd in 2011. Therefore, no significant impacts to sanitary sewage were found to occur.

## **C. EXISTING CONDITIONS**

### **WATER SUPPLY**

New York City gets its water from three watersheds and a network of reservoirs, aqueducts, and tunnels extending as far as 125 miles north of the city. Within the city, a grid of mains distributes water to individual buildings. The New York City Department of Environmental Protection (NYCDEP) operates the water supply system as well as the sewer system, which is discussed later in this chapter.

The Delaware and Catskill systems collect water from the Catskill Mountains and deliver it to Kensico Reservoir in Westchester County and then to the Hillview Reservoir in Yonkers. From there, it is distributed to the rest of the city through two tunnels. City Tunnel No. 1 goes through the Bronx and Manhattan to Brooklyn, and City Tunnel No. 2 goes through the Bronx, Queens, and Brooklyn (and from there through the Richmond Tunnel to Staten Island). A third tunnel, City Tunnel No. 3, is under construction; the first portion became operational in August 1999 and serves Manhattan.

The Croton system collects water from Westchester and Putnam Counties and delivers it to the Jerome Park Reservoir in the Bronx. From there, it is distributed to the Bronx and Manhattan through the New Croton Aqueduct, which travels beneath the Bronx and Manhattan. The Croton system has lower pressure than the Delaware and Catskill systems and supplies domestic uses primarily in the lower elevations of Manhattan and the Bronx. The higher-pressure Delaware and Catskill systems serve all five boroughs and higher elevations where the water pressure of the Croton system would be inadequate. The Croton system supplies on average about 10 percent of the city's water needs, and the Catskill/Delaware systems supply the rest. However, depending on conditions, the Croton system can supply up to 40 percent of the city's needs. Any of the three systems can serve the project site.

In 2006, water consumption in the city averaged approximately 1,069 mgd. In Manhattan, average consumption is approximately 420 mgd; peak consumption is approximately 500 mgd.

According to NYCDEP maps, an interconnected grid of 12-inch water lines runs beneath the streets and avenues, and this grid supplies water to individual buildings. Two larger water mains that are part of the city's water transmission system are located under First Avenue. Around the 700 First Avenue (Waterside) development parcel, the 12-inch main along First Avenue interconnects with 12-inch mains running between First Avenue and the FDR Drive on East 30th, 39th, 40th, and 41st Streets. Multiple water pipes supply the Waterside parcel. Such a grid system equalizes water pressure in the area and allows a section to be cut off for repair without affecting users not directly connected to that section.

The existing water demand on the four First Avenue development parcels is negligible, as the sites are either vacant, undergoing remediation, or used for parking.

According to NYCDEP, there are currently no problems with the water distribution system in the area and water pressure in the area is adequate. The First Avenue parcels are located within a water distribution zone with a water pressure head of 160 to 170 feet, which is considered very good. These mains supply fire hydrants and complete the local distribution networks to the FDR Drive.

**SANITARY SEWAGE**

The development parcels are located within the service area of the Newtown Creek WPCP, which provides modified aeration treatment of the sanitary sewage. This treatment removes about 60 percent of the biochemical oxygen demand (BOD) and about 75 percent of the total suspended solids (TSS) in the sewage. This level of treatment does not meet the standards of full secondary treatment. NYCDEP is currently upgrading the Newtown Creek WPCP to bring the plant into compliance, and construction for the long-term WPCP upgrade has been ongoing since 1998 and will continue through 2013.

The sludge is further dewatered at another WPCP and is beneficially reused. The wastewater flow, or “effluent,” is discharged into the East River. The New York State Department of Environmental Conservation (NYSDEC) regulates the effluent from the Newtown Creek WPCP by the use of a State Pollutant Discharge Elimination System (SPDES) permit. The Newtown Creek WPCP has a permitted flow capacity of 310 mgd. For the 12-month period ending in November 2007 (the latest 12-month period for which data from the plant are available), the plant had a daily average actual flow of 240 mgd, well below the permitted level (see Table 12-1). In addition, the Newtown Creek WPCP generally meets its SPDES treatment requirements for removal of BOD and TSS, which are 60 and 75 percent, respectively.

**Table 12-1  
Daily Average Actual Flows to Newtown  
Creek WPCP**

Year	Month	Flow (mgd)
2006	December	233
2007	January	230
	<u>February</u>	<u>230</u>
	<u>March</u>	<u>237</u>
	<u>April</u>	<u>255</u>
	<u>May</u>	<u>227</u>
	<u>June</u>	<u>246</u>
	<u>July</u>	<u>258</u>
	<u>August</u>	<u>268</u>
	<u>September</u>	<u>233</u>
	<u>October</u>	<u>239</u>
	<u>November</u>	<u>229</u>
		12-month average
	SPDES Permit Limit	310
<b>Source:</b> New York City Department of Environmental Protection.		

The development parcels are served by combined sewers that collect stormwater runoff and sanitary sewage. During dry weather, the combined sewer lines carry only sanitary sewage from the buildings in the area and convey it to interceptor sewers that are located beneath East 41st Street, Tudor City Place, East 40th Street, the Midtown Tunnel approach, East 36th Street, and

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East 35th Street. Flows enter interceptor sewers only at regulators, and individual buildings are not allowed to connect to interceptor sewers. Four regulator and diversion chambers (located between East 35th and East 41st Streets near the FDR Drive) ensure that all dry weather sanitary flows in the area are diverted to the intercepting sewer. The interceptor sewer system is sized to accommodate wastewater flows at the rate of 175 gallons per person per day and to optimally operate at 70 percent of its capacity. The interceptor sewer system currently operates well below this design. The interceptor sewers flow to the Manhattan Pump Station on Avenue D between East 12th and 13th Streets, where the sewage is pumped under the East River to the WPCP. The Manhattan Pump Station can pump up to 300 mgd and reaches this capacity during wet weather.

During and immediately after precipitation, the combined sewer lines convey both sanitary sewage and stormwater. The flow is directed to regulators which divert two times the design dry weather flow to the interceptors which flow to the Manhattan Pump Station and the Newtown Creek WPCP. Sanitary and storm flow in excess of two times the design dry weather flow is diverted into the East River in a Combined Sewer Overflow (CSO).

The 616 First Avenue development parcel can be serviced by a 3-feet 6-inch by 2-feet 4-inch combined sewer line that runs beneath East 36th Street. The 685 First Avenue parcel can be serviced by a 15-inch diameter combined sewer in East 40th Street, an 18-inch diameter combined sewer in East 39th Street and an 18-inch combined sewer that runs beneath First Avenue from East 40th to East 38th Streets. The 700/708 First Avenue parcel can be serviced by an 8-feet by 8-feet combined sewer beneath East 41st Street, the 18-inch combined sewer beneath First Avenue from East 40th to East 38th Streets, and a 4-feet 9-inch by 4-feet 3-inch and a 60-inch diameter combined sewer beneath East 38th Street from First Avenue to FDR Drive. During wet weather, the combined sewer overflow discharges into the East River any sanitary sewage and stormwater that is in excess of two times the regulator's design dry weather flow capacity.

The sewage flows from the development parcels are currently not measured and are considered negligible. However, when the Consolidated Edison plant was active, it is estimated that sewage generation was more than 100,000 gpd.

Since the issuance of the Draft SEIS, the project sponsor consulted with NYCDEP's Bureau of Water and Sewer Operations staff to determine the capacity of the sewer system. The analysis showed that one sewer segment that would be utilized by the project—the 18-inch diameter combined sewer in First Avenue from East 38th to East 39th Streets—would require upgrading to accept more flow in addition to the existing flow. The 700/708 First Avenue site would be served by the upgraded 30-inch combined sewer in First Avenue and the combined sewers in East 38th Street and East 41st Street. The East 38th Street and East 41st Street combined sewers have sufficient capacity for combined flows.

### STORMWATER

Stormwater runoff from the development parcels flows through the combined sewer system (described above) and discharges into the East River. The rational formula for calculating runoff is  $Q = C \times I \times A$  where:

“Q” is runoff in cubic feet per second (cfs);

“C” is the runoff coefficient;

“T” is the rainfall intensity in inches per hour; and

“A” is the area in acres.

The surface area of the development parcels is approximately 8.7 acres. The design storm used by NYCDEP is a rainfall intensity of 5.95 inches per hour. When the Consolidated Electric plant was operating, the site was covered with buildings and pavement, and the runoff was about 47.6 cubic feet per second (cfs). All of the parcels are generally cleared with exposed soil or gravel. The NYCDEP approved coefficient for vacant urban land is 0.3. The total runoff from the development parcels in an undeveloped state is about 15.5 cfs.

The East River is not a true river, but rather a tidal strait connecting the western end of Long Island Sound to New York Harbor. The tidal currents are notoriously strong with a maximum velocity of more than 5 nautical miles per hour (knots) and an average velocity of about 4 knots at maximum flow. The average tidal range at East 41st Street is about 4.31 feet, and the tidal range during a spring tide is 4.89 feet. Being a tidal strait, the water in the East River contains salt. The salinity ranges from about 19.3 to 26.4 parts per thousand. The water temperature ranges from 34 to 80 degrees Fahrenheit. In the East River, dissolved oxygen levels range from 3.2 to 4.7 milligrams per liter or parts per million. This level of dissolved oxygen is sufficient to support aquatic life, but during the summer it is at the low end of the necessary concentration of dissolved oxygen. The tidal data were obtained from the National Oceanic and Atmospheric Administration and the salinity, temperature and dissolved oxygen data were obtained from NYCDEP.

## **D. THE FUTURE WITHOUT THE PROPOSED ACTIONS**

In the future without the Proposed Actions and all of the development parcels will be vacant, with no demand for water or wastewater collection and treatment. Stormwater runoff from the site is expected to continue.

### **WATER SUPPLY**

In the future without the Proposed Actions, local distribution for water supply is not expected to change significantly.

Because its water supply is finite, the city has initiated a comprehensive water conservation program that seeks to reduce water use by implementing metering and requiring low-flow fixtures in all new development projects and retrofits of existing fixtures (Local Law No. 29, 1989). Other measures, including leak detection programs and locking fire hydrant caps, are aimed at further reducing the city’s water needs.

NYCDEP projects that the savings from these conservation measures will, over the next decade, offset to some degree any increase in water demand from added consumers (i.e., population and employment growth). Future water use for the entire Borough of Manhattan is conservatively projected to remain at or below the current average use of 420 million gpd, with peak use of 500 million gpd.

There would be no water demand in the future without the Proposed Actions at the development parcels.

## **SANITARY SEWAGE**

As discussed above, the Newtown Creek WPCP does not provide full secondary treatment of sanitary sewage, which is required by the Clean Water Act. NYCDEP is currently upgrading the Newtown Creek WPCP to bring the plant into compliance, and construction for the long-term WPCP upgrade has been ongoing since 1998 and will continue through 2013. By December 31, 2008, the Newtown Creek WPCP is expected to meet the Clean Water Act requirements. When all of the upgrades are completed at the Newtown Creek WPCP, it will be able to provide secondary treatment to 700 mgd of peak flow during wet weather. As part of the construction, the Manhattan Pump Station will be reconfigured and re-equipped to be able to pump 400 mgd.

NYCDEP prepares flow projections for each of its WPCPs. These flow projections include population projections from New York City Department of City Planning (NYCDCP). The NYCDEP flow projections are based on, among other things, rezonings, proposed projects, and general background population growth. For 2015, NYCDEP's flow projection of dry weather sanitary sewage to the Newtown Creek WPCP is 219 mgd.

In the future without the Proposed Actions, the development parcels are expected to be vacant, and will not discharge sanitary sewage into the New York City system.

## **STORMWATER**

In the future without the Proposed Actions, it is assumed that the development parcels would be vacant, and the runoff is expected to be about 15.5 cfs.

## **E. PROBABLE IMPACTS OF THE PROPOSED ACTIONS**

This section discloses the anticipated future demand for water, sewage treatment, and stormwater management under the proposed development program for the 2014 build year. The infrastructure assessments apply *City Environmental Quality Review (CEQR) Technical Manual* methodology, using square footage figures as outlined in Table 1-1, "Summary of Proposed Development Program" of Chapter 1, "Project Description."

### **WATER SUPPLY**

The Proposed Actions would introduce a total of 3,753,607 gross square feet (gsf) of residential use, 119,936 gsf of community facility use, 1,532,437 gsf of commercial office use, 71,167 gsf of retail use, and 640,030 gsf of below-grade space. Of the below-grade space, 315,105 gsf would be dedicated to parking, while the remaining space would be used for mechanical services. The program would also include publicly accessible open space, which, in addition to the non-retail below-grade space, is not included in the water usage and sewage generation analysis because the demand for water supply and sewage treatment generated would be minimal. The proposed buildings would likely have two water supplies—one for domestic water (e.g., sinks, toilets) and one for fire protection. The domestic water lines connecting to the buildings would range from 4 to 6 inches in diameter and the fire water lines would range from 6 to 8 inches in diameter.

As shown in Table 12-2, the proposed development program would generate an estimated demand of about 1.47 million gpd of water for consumption and air cooling purposes.

**Table 12-2**  
**Water Usage for the Proposed Development Program**

Use	Size	Domestic Usage Rate	Air Conditioning Water Usage Rate (gpd/sf)	Domestic Usage (gpd)	Air Conditioning Usage (gpd)	Total Water Usage (gpd)
Residential	6,499 residents <sup>1</sup> , or 4,166 units, or 3,753,607 gsf	112 gpd/resident	0.10	727,888	375,361	1,103,249
Retail	71,167 gsf	0.17 gpd/gsf	0.17	12,098	12,098	24,197
Office	1,532,437 gsf	0.10 gpd/gsf	0.10	153,244	153,244	306,487
Community Facility	119,936 gsf	0.17 gpd/gsf	0.17	20,389	20,389	40,778
<b>Total</b>				913,619	561,092	1,474,711
<b>Note:</b> <sup>1</sup> Number of residents assumes 1.56 residents per unit.						
<b>Source:</b> <i>City Environmental Quality Review (CEQR) Technical Manual (2001).</i>						

The projected demand would represent approximately 0.12 percent of the 1.2 billion gpd of water consumed in New York City, or 0.35 percent of the 420 million gpd consumed in Manhattan. As a result, it is not expected that this added demand would overburden the city's water supply or the local conveyance system, and no significant adverse impacts are anticipated. The proposed project would also comply with the water conservation measures of the city as mandated by Local Law 29 of 1989. Prior to construction, DEP's Bureau of Water and Sewer Operations will be contacted to ensure that the proposed buildings' water connections to DEP's water supply system are the proper size and in appropriate locations. Analyses and improvements, if required, would be undertaken at that time.

### SANITARY SEWAGE

Sanitary sewage flows would be discharged from the proposed buildings into the combined sewer system and would be treated at the Newtown Creek WPCP. Sanitary connections from the 700/708 First Avenue parcels would discharge to combined sewers to the north and south of 700/708 First Avenue, in East 41st Street and East 38th Street, respectively. The 616 and 685 First Avenue parcels would connect into the combined sewers in East 36th and East 39th Streets, respectively.

Conservatively assuming that all water consumed at the development parcels other than that used for air conditioning enters the sewer system, the proposed development program would generate approximately 913,619 gpd of sewage (see Table 12-2).

This amount of wastewater, representing approximately 0.30 percent of the Newtown Creek WPCP's permitted capacity, is not expected to adversely affect the WPCP's capacity or its treatment efficiency. The projected dry weather flow to the Newtown Creek WPCP in 2015 would be 219 mgd, well below its permitted capacity of 310 mgd.

### STORMWATER

Since the issuance of the Draft SEIS, the project sponsor consulted with NYCDEP's Bureau of Water and Sewer Operations staff to determine whether the capacity of the surrounding sewer system would handle the projected flows, or whether specific improvements would be required as part of the project design.

STORMWATER FLOWS IN THE COMBINED SEWER SYSTEM

The proposed development program is expected to use the existing combined sewers and two existing storm sewers that discharge stormwater into the East River. For the 700/708 First Avenue parcels, all stormwater flow would be directed to one of two existing 4-foot by 2-foot 4-inch storm sewers immediately east of the former East 39th and East 40th Streets. These two storm sewers have outfalls to the East River. Field inspection of the two 4-foot by 2-foot 4-inch storm sewers would be performed to verify the conditions of both pipes. It is believed that both storm sewers are functional, however, if the field inspection reveals that one or both storm sewers are in substandard condition, they would be rehabilitated if possible. If these storm sewer could not be rehabilitated, the stormwater from the 700/708 First Avenue parcel would be detained on-site and discharged to adjacent combined sewers at an allowable rate. Flows from the development parcels (developed flows) would be conveyed through new connections to the existing sewers. With the proposed development program, the stormwater flows would increase from about 15.5 cfs to about 43.9 cfs, an increase of 28.4 cfs. However, this is a reduction of about 3.7 cfs compared to conditions when the Consolidated Edison plant was operating. The stormwater flow rate from the developed 700/708 First Avenue parcel would be approximately 32.2 cfs. By diverting 32.2 cfs from the developed 700/708 First Avenue parcel into the existing, but unused storm sewers, the stormwater flow from the proposed project into the combined sewer system would be 11.7 cfs, which is 3.8 cfs less than what the stormwater flow from the site would be in the Future without the Proposed Project. This flow would be diverted from the combined sewer system and Newtown Creek WPCP and into the two existing 4-foot by 2-foot 4-inch storm sewers which discharge to the East River if these existing storm sewers and outfalls are in good condition or if rehabilitation is feasible. By allowing more sanitary flow to be directed to the regulator and interceptor sewers during low rainfall conditions, the number of CSO events would be reduced.

STORMWATER FLOWS IN THE EAST RIVER

The project's incremental new stormwater flow of 28.4 cfs is minimal compared to the flows in the East River. Based on NYCDEP studies, stormwater contains lower concentrations of pollutant than CSO. This stormwater flow only occurs during a very intense rain storm, which NYCDEP defines as 5.95 inches per hour. A storm of this intensity is rare in New York City. During a normal tide, flows reach over 16,000 cfs, not considering precipitation. During a spring tide, which occurs near the new and full moon phases, the tidal flow is about 20,000 cfs. This range of tidal flows occurs twice a day, every day. The incremental new stormwater flows are about 0.14 to 0.18 percent of the basic tidal flows. This increase would not have a significant adverse impact on water quality within the East River.

**COMBINED SEWAGE FLOWS**

The existing 3-foot 6-inch by 2-foot 4-inch combined sewer that fronts the 616 First Avenue parcel in East 36th Street has sufficient capacity to handle peak sanitary and storm flows that would result from the rezoned property. However, in accordance with NYCDEP's request, on-site detention would be implemented to reduce peak storm flows that would discharge from the property. The goal of the on-site detention system would be to allow more sanitary flow to be directed to the regulator and interceptor sewer during most rainfall events, thereby reducing the number of CSO events at Regulator M-43. According to NYCDEP, the Drainage Plan sewers in this area of Manhattan were designed to handle flows from a design storm of intensity (I) of 4 inches per hour (in/hr) with a runoff coefficient (C) of 0.60. For the 616 First Avenue and 685



First Avenue parcels, on-site stormwater detention systems would be designed to comply with these Drainage Plan C and I values for which the sewer was designed.

The sewer analysis showed that the 18-inch diameter combined sewer in First Avenue from East 38th to East 39th Street would require upgrading. Therefore, as part of the project, this segment of the sewer would be upgraded to a 30-inch diameter combined sewer to accommodate the projected flows. The sewer analysis showed that the tributary combined sewer system (including the sewer segments upstream of the project) would benefit from the increased sewer capacity by allowing the system to accommodate more flow.

Due to slight increases in sanitary flow, weir adjustments may be required in Regulator M-43, 43-B and 44. Height adjustments to the weirs in these regulators would be simple improvements with minimal disruptions to the combined sewer system.

Overall, the project would result in benefits to the combined sewer system. By incorporating on-site stormwater detention on the 616 and 685 First Avenue parcels, the project would reduce existing combined flows to the combined sewer system. By directing all stormwater flow from the 700/708 First Avenue parcel to storm sewers, approximately 32.2 cfs would be diverted from the combined sewer system. Also, the upgraded sewer segment in First Avenue would increase the capacity of that portion of the combined sewer system. The project improvements would result in more sanitary flow directed to the regulators, interceptor sewers and WPCP and a reduction of CSO events compared to conditions in the future without the proposed actions.

Additionally, a sewer connection permit application would be submitted to NYCDEP prior to connecting the buildings to the sewer system. NYCDEP would review and approve the plans for sewer connections for the proposed project. Through the project improvements requested by NYCDEP early in the infrastructure planning for the site and through obtaining the appropriate sewer connection permits prior to construction, the proposed project would not have a significant adverse impact on the sewer system.

## **F. FUTURE CONDITIONS WITH THE UNDC PROJECT**

In the FGEIS, the proposed UNDC project at East 41st Street and First Avenue was considered as part of the baseline condition in the future without the Proposed Actions. However, because the UNDC project is complex and requires approvals from the New York State Legislature, the New York City Economic Development Corporation, and possibly other public agencies, including its own environmental review, it is uncertain whether the project will be completed by 2014 or, in fact, ever built. Therefore, the “Future Without the Proposed Actions” section in this document does not include the UNDC project. This section considers an additional future baseline condition in which the UNDC project is constructed.

Given that the proposed UNDC building would be a substantial new commercial use in the immediate area, this analysis combines the expected infrastructure demands of the UNDC building with those of the proposed development program in determining the potential for significant impacts with respect to infrastructure. Since little is known about the details of the proposed UNDC building, the analyses use standard consumption and generation factors developed for the *CEQR Technical Manual*. The factors are conservative, and have been found to be appropriate and reasonable for development in New York City.

## **WATER SUPPLY**

The UNDC building would add a total of 198,000 gpd of water demand. This total is based on 25 gpd per employee for consumptive uses and 0.10 gpd per square foot for air conditioning.<sup>1</sup> The UNDC's projected additional demand of 198,000 gpd is about 0.017 percent of New York City's average daily demand of 1.2 billion gallons and 0.043 percent of Manhattan's average daily demand of 460 million gpd. Even combined with projected demand from the proposed development program of 1.47 million gpd, the total demand would be 0.14 percent of the city's demand and 0.40 percent of Manhattan's water demand. This demand would not have a significant adverse impact on the water supply system's ability to adequately deliver water to New York City or Manhattan.

## **SANITARY SEWAGE**

Conservatively assuming that all of the consumptive water demand is discharged into the sewer system, the UNDC building would generate about 99,000 gpd of sanitary sewage. An additional 99,000 gpd consumed by the air conditioning would be evaporated and not discharged into the sewer system. The sewage from the UNDC building would be treated at the Newtown Creek WPCP, the same plant that would treat sewage from the proposed development program. The Newtown Creek WPCP has a permit capacity of 310 mgd and is estimated to be treating 244 mgd on average. The total sewage from the UNDC building and the proposed development program would be about 1.0 mgd, or 0.33 percent of the WPCP's rated capacity. This generation would not cause Newtown Creek WPCP to exceed its capacity or impair its ability to properly treat sanitary sewage, and therefore no significant adverse impacts would result.

## **STORMWATER**

The UNDC building is expected to use the existing combined sewers to discharge stormwater into the East River. Flows from the UNDC site would be conveyed through new connections to the existing sewers.

With the UNDC project, the stormwater flows from the UNDC site would remain about the same as current conditions, as the site is currently paved, with a flow of approximately 8.7 cfs. If required, it is assumed that the sponsors of the UNDC project would bring the flows from their site into compliance with DEP's Drainage Plan for the area. As there would be minimal, if any, incremental flow from the UNDC site with the UNDC building, the inclusion of the UNDC project in the future without the Proposed Actions would not alter the conclusion that the proposed development program would not result in significant adverse impacts to the combined sewer system or to the water quality in the East River.

## **G. CONCLUSIONS**

The water demand expected to result by 2014 from the proposed development program is 1,474,711 gpd. Thus, the proposed development program would constitute an increase of 384,711 gpd over the maximum projected water demand analyzed by the FGEIS for the Rezoning Scenario's illustrative development programs, which ranged from 1,065,000 to

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<sup>1</sup> For 990,000 square feet devoted to UNDC office and conference space, the estimated number of workers is 3,960, based on 250 square feet per worker. This factor includes the full range of workers that could be expected in the building as well as those workers needed to operate the building itself.

1,090,000 gpd in the 2011 Final Build year. As compared with the expected demand of 1.2 billion gpd citywide, and 420 million gpd in Manhattan, this increase would not significantly impact the water supply system.

The sanitary sewage generation expected to result from the proposed development program is 913,619 gpd. This amount of wastewater, representing approximately 0.30 percent of the Newtown Creek WPCP's permitted capacity, would not adversely affect the WPCP's capacity or its treatment efficiency. Therefore, the proposed development program would not result in significant adverse impacts on the Newtown Creek WPCP with respect to sanitary sewage. The proposed development program would generate less sewage than the maximum amount analyzed by the FGEIS, which ranged from 781,000 to 1,064,000 gpd in the 2011 Final Build year. With the proposed upgrading of the existing 18-inch diameter combined sewer in First Avenue from East 38th Street to East 39th Street and with on-site detention, the sewer system would be able to meet the demands of the proposed development program.

Stormwater from the 700/708 First Avenue parcel would be either diverted from the combined sewer system into storm sewers that discharge directly into the East River or detained on-site. The diversion or detention would lessen the stormwater flow into the combined sewer system by 3.8 cfs compared to the site being vacant and without stormwater diversion. Stormwater from 685 and 616 First Avenue would be detained and then discharged into the combined sewer system. The stormwater discharges would not have a significant adverse impact on the sewer system or on the water quality of the East River. Because of the diversion and/or detention of stormwater, the number of combined sewer overflow events is expected to be reduced.

The projected incremental stormwater flows from the development parcels under the proposed development program (28.4 cfs) would represent about 0.14 to 0.18 percent of the East River's basic tidal flows, and would not have a significant adverse impact on water quality within the East River. \*